

## 5 WE CLAIM

1. A compound having the following formula

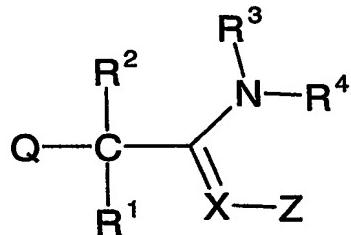


Figure One

wherein

10

Q can be any five- or six membered carbocyclic or heterocyclic ring,

X is N, CR, COR, CSO<sub>n</sub>R (where n = 0, 1, or 2), CN(R)<sub>2</sub>, C(C=O)R,  
C(C=S)R, C(C=NR)R, CP(=O)<sub>m</sub>(R)<sub>2</sub> (where m = 0 or 1), or CP(=S)<sub>m</sub>(R)<sub>2</sub>

15 (where m = 0 or 1),

wherein each R independently can be

- (a) a C<sub>1-10</sub>, branched or unbranched, alkyl, alkoxy, alkenyl, alkynyl, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylcarbonyl, alkylcarbonothioyl, alkoxy carbonyl, alkylthiocarbonyl, alkoxy carbonothioyl, alkylthiocarbonothioyl, or HC(=NH)-,
- (b) a C<sub>3-10</sub>, cycloalkyl, or cycloalkenyl,
- (c) an aryl, heterocyclyl, aryloxy, heterocyclxyloxy, arylthio, heterocyclthio, arylamino, or heterocycllamino, or
- (d) a hydro, hydroxy, mercapto, amino, cyano, formyl, nitro, halo, or aminocarbonyl,

25

Z is CN or NO<sub>2</sub>,R<sup>1</sup> and R<sup>2</sup> each independently can be

- 5           (a) a C<sub>1-10</sub>, branched or unbranched, alkyl, alkoxy, alkenyl, alkynyl, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylcarbonyl, alkylcarbonothioyl, alkoxycarbonyl, alkylthiocarbonyl, alkoxycarbonothioyl, alkylthiocarbonothioyl, or HC(=NH)-,
- 10           (b) a C<sub>3-10</sub>, cycloalkyl, or cycloalkenyl,
- (c) an aryl, heterocyclyl, aryloxy, heterocyclyloxy, arylthio, heterocyclithio, arylamino, or heterocycllamino, or
- (d) a hydro, hydroxy, mercapto, amino, cyano, formyl, nitro, halo, or aminocarbonyl,
- 15 R<sup>1</sup> and R<sup>2</sup> can optionally be linked together with either a bond or a chain of 1-4 atoms, where such atoms can be carbon, nitrogen, sulfur, phosphorus and oxygen,
- R<sup>3</sup> and R<sup>4</sup> each independently can be,
- 20           (a) a C<sub>1-10</sub>, branched or unbranched, alkyl, alkoxy, alkenyl, alkynyl, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylcarbonyl, alkylcarbonothioyl, alkoxycarbonyl, alkylthiocarbonyl, alkoxycarbonothioyl, alkylthiocarbonothioyl, or HC(=NH)-,
- (b) a C<sub>3-10</sub>, cycloalkyl, or cycloalkenyl,
- 25           (c) an aryl, heterocyclyl, aryloxy, heterocyclyloxy, arylthio, heterocyclithio, arylamino, or heterocycllamino, or
- (d) a hydro, hydroxy, mercapto, amino, cyano, formyl, nitro, halo, or aminocarbonyl,
- 30 R<sup>2</sup> and R<sup>3</sup> can optionally be linked together with a chain of 1-4 atoms, where such atoms can be carbon, nitrogen, sulfur, phosphorus and oxygen,

5    R<sup>3</sup> and R<sup>4</sup> can optionally be linked together with a chain of 1-4 atoms, where such atoms can be carbon, nitrogen, sulfur, phosphorus and oxygen,

10    Each member of Q, X, R, R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, and R<sup>4</sup>, which may have a hydrogen atom in a certain position, may instead of having such hydrogen atom, have a,

- (a) a C<sub>1-10</sub>, branched or unbranched, alkyl, alkoxy, alkenyl, alkynyl, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylcarbonyl, alkylcarbonothioyl, alkoxy carbonyl, alkylthiocarbonyl, alkoxy carbonothioyl, alkylthiocarbonothioyl, HC(=NH)-, dialkylphosphonyl, or dialkylphosphatyl,
- (b) a C<sub>3-10</sub>, cycloalkyl, or cycloalkenyl,
- (c) an aryl, heterocyclyl, aryloxy, heterocyclyloxy, arylthio, heterocyclithio, arylamino, or heterocycllamino, or
- 20    (d) a hydro, hydroxy, mercapto, amino, cyano, formyl, nitro, halo, or aminocarbonyl,

in such position.

- 2. A composition comprising a compound according to claim 1 and at least one other active compound where such active compound is at least insecticidally, acaricidally, or nematocidally active.
- 3. A process of applying a compound according to claim 1, or a composition according to claim 2, to a locus in an amount effective to control pests.

- 5     4. A process of applying a compound according to claim 1, or a composition according to claim 2, to a locus in an amount effective to control insects or mites.
- 10    5. A process of topically applying a compound according to claim 1, or a composition according to claim 2, to an animal in an amount effective to control fleas.
- 15    6. A process of orally administering a compound according to claim 1, or a composition according to claim 2, to an animal in an amount effective to control fleas.